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| WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201 | | | EXAMINER SHEEHAN, JOHN P | |
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1742

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,128

Applicant(s)

THOMAS ET AL.

Examiner

John P. Sheehan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-24, 26, 27, 42, 45 and 46 is/are pending in the application.
- 4a) Of the above claim(s) 10-12, 16, 18, 19, 21-23, 26 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 13-15, 17, 20, 24, 42, 45 and 46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/05 11/05.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 24 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

I. Dependent claim 24 recites that the solution is Ta/Mo. However, as presently drafted independent claim 1 does not encompass this embodiment in that the second Markush group depicting the second of two elements does not encompass either Mo nor Ta. Thus, claim 1 cannot encompass a solution of Ta and Mo.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 to 3, 5 to 9, 12 to 15, 17, 20, 24, 42 and 45 to 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the

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inventor(s), at the time the application was filed, had possession of the claimed invention.

I. In claim 1, the new claim language, "each of the first and second elements being present in the solid solution at a concentration of at least 0.001%" (emphasis added by the Examiner) does not find support in the specification as filed and therefore is considered to be new matter. Applicants have cited paragraph 0064 of the specification as support for this new claim language. The Examiner does not agree. Based on this newly added claim language, each of the first and second elements can be present in an amount of as little as 0.001% for a total of 0.002% with the balance or 99.998% of the alloy being any other element or elements. Paragraph 0064 of the specification does not provide support for such an embodiment wherein each of the first and second elements can be present in an amount of as little as 0.001% for a total of 0.002%

II. In claim 1 as amended and new claim 45, two different Markush groups are now recited, one Markush group for the first element and one Markush group for the second element. However, there is no support in the application, as filed, for these two Markush groups. Applicants refer to the disclosure of Groups 1, 5, 6, 8, 9 and 10 of the Periodic Table as support for these Markush groups. The Examiner does not agree. Although the listing of Groups 1, 5, 6, 8, 9 and 10 of the Periodic Table includes all of the elements in both Markush groups there is no disclosure to support dividing the elements into the respective Markush groups now recited in the claims.

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4. Claims 1 to 3, 5 to 9, 12 to 15, 17, 20, 24, 42 and 45 to 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

I. In independent claims 1 and 45 and dependent claim 46 the elements dubnium (Db), seagorgium (Sg), hassium (Hs), meitnerium (Mt) and darmstadtium (Ds) are listed as possible components of the claimed sputtering targets. However, according to the descriptions of each of these elements attached to this Office action an observable quantity of these elements has never been achieved. Applicants' specification does not teach how to make and isolate these elements. Accordingly, applicants' specification is not considered to be enabling with respect to the elements dubnium (Db), seagorgium (Sg), hassium (Hs), meitnerium (Mt) and darmstadtium (Ds).

II. The claims also recite that the claimed sputtering target can contain francium (Fr) and caesium (Cs cesium). According to the descriptions of each of these elements attached to this Office action each of these elements have unusual properties. For example, francium has never been isolated as a pure element and has a half-life of 22 minutes, while cesium is liquid at room temperature and explosively reactive. Applicants' specification does not teach how pure francium can be made or how francium, having a half-life of only 22

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minutes, can be used to make the claimed sputtering target. Nor does applicants' specification teach how to make the claimed sputtering target using explosively reactive liquid cesium. Accordingly, applicants' specification is not considered to be enabling with respect to the use of the elements francium (Fr) and cesium (Cs) in the instantly claimed invention.

Claim Interpretation

5. The claim language, "sputtering target" and "the target being configured for mounting within a physical vapor deposition apparatus" has been added to the claims (for example see claim 1). Although not all forms of an alloy will be the optimum sputtering target, any form of an alloy can be a sputtering target and can be mounted in a physical vapor deposition apparatus. Thus, it is the Examiner's position that this language does not limit the form of the claimed alloy.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 to 3, 5 to 7, 9, 13, 14, 17, 20, 24 and 25, 42, 45 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Schussler et al. (Schussler, US Patent No. 3,592,639).

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Schussler teaches a single phase tantalum based alloy containing tungsten (Abstract of the Disclosure and column 1, line 71). Schussler teaches a specific example alloy containing, in addition to tantalum and tungsten, columbium (niobium), hydrogen, molybdenum, cobalt, iron, vanadium, nickel and chromium (column 3, lines 40 to 60). The tungsten, columbium (niobium), hydrogen, molybdenum, cobalt, iron, vanadium, nickel and chromium of Schussler's example alloy are all encompassed by the applicants' claims language,

solid solution of two or more elements in elemental form;
a first of the two or more elements being selected from H, Li, Na, K, Rb, Cs, Fr, V, Nb, Ta, Db, Cr, Mo, W, Sg, Fe, Ru, Os, Hs, Co, Rh, Ir, Mt, Ni, Pd, Pt, and Ds, and a second of the two or more elements being selected from H, Li, Na, K, Rb, Cs, Fr, V, Db, Cr, Sg, Fe, Hs, Co, Mt, and Ds, each of the first and second elements Being present in the solid solution at a concentration of at least 0.001%,

In view of this discussion of Schussler and the discussion under the heading "Claim Interpretation", applicants' claimed invention does not distinguish over Schussler's disclosed compositions.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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9. Claims 1 to 3, 5 to 8, 20, 42, 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Perry et al. (Perry, US Patent Publication No. 2004/0025986, cited in the IDS submitted September 7, 2004).

Perry teaches single-phase precious metal sputtering targets having compositions that are encompassed by the instant claims (Abstract and page 2, paragraphs 0014 and 0015, and the examples). Applicants' claimed invention does not distinguish over Perry's disclosure.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 to 3, 5 to 8, 13 to 15, 24, 25, 42, 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Kumar et al. (Kumar, US Patent No. 6,521,173, cited in the IDS submitted January 12, 2004).

Kumar teaches sputtering targets (column 3, lines 6 to 26) having compositions that are encompassed by the instant claims (column 2, lines 19 to 26 and column 4, lines 13 to 16). Kumar also teaches that the disclosed sputtering targets have a uniformity of texture, i.e. the targets are single phase as recited in applicants' claims

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(column 13, lines 18 to 20). Applicants' claimed invention does not distinguish over Perry's disclosure.

Response to Arguments

1. Applicant's arguments filed November 9, 2005 have been fully considered but they are not persuasive. On page 8 of their response applicants argue that;

Not one of Schussler, Perry and Kumar discloses the claim 1 recited sputtering surface having a single phase corresponding to a solid solution of two or more elements including a first and second element selected from the respectively recited lists. Accordingly, claim 1 is not anticipated by Schussler, Perry or Kumar and is allowable over these references.

The Examiner is not persuaded in that applicants' argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from each of the applied references.

Conclusion

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

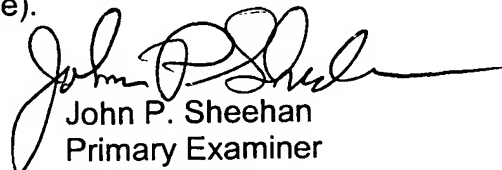
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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John P. Sheehan
Primary Examiner
Art Unit 1742

jps